The Effects of Teaching Critical Thinking Skills on EFL High School Students' Reading Comprehension

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Abstract

This study investigated the effects of teaching critical thinking skills on EFL high school students' reading comprehension. To this end, a quasi-experimental pretest-posttest design was used. The data were obtained using test, reflective journal, and interview from two sections of 98 grade ninth Ethiopian students who were selected through random sampling. The experimental group students received critical thinking skills instruction, but the control group students learned through the conventional teaching reading method. Quantitative data were analyzed through independent sample T-test and descriptive statistics, while the qualitative were analyzed through thematic analysis. The findings revealed that there was a statistically significant difference between the experimental and control groups in their reading comprehension. The students who participated in critical thinking skills instruction enhanced their reading comprehension when students in controlled group achieved inadequate reading comprehension. Students who were taught reading skills through critical thinking skills, were able to understand explicit and implicit meanings of reading texts, recognize major themes, examine relationships and differences of arguments, and propose alternative explanations. It is, therefore, recommended that researchers, teachers, and students pay due attention to critical thinking skills instruction.

Keywords: Critical thinking skills, EFL students, Reading comprehension, Reading skills, Teaching critical thinking

Introduction

One of the major goals of reading is to construct meaning from a text. Since the process of reading is interactive and systematic, readers need to analyze arguments, integrate them with their understanding, and make their own meaning (Aghajani & Gholamrezapour, 2019). Reading requires the consciousness and the process of making meaning through interacting with the text (Albeckay, 2013). Thus, readers need to interact with the text and use a variety of strategies, and should also be vigilant of the entire process.

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Reading is a complex skill that requires the ability to interpret, analyze, evaluate, and infer arguments from texts which are the core critical thinking skills (Sandhu & Blakeley, 2020, and Almutairi, 2018). Reading scholars viewed that reading and critical thinking are interrelated together hence both skills require profound cognitive tasks. For instance, Paul (2005) considered critical thinking to be a collection of great mental skills. Also, Facione (2015) notes that critical thinking involves mental skills such as interpretation, analysis, evaluation, explanation, inference, and self-regulation.

According to Vaseghi, Gholami and Barjesteh (2012) and Samelian (2017), critical thinking has been introduced by Socrates, Plato, and Aristotle 2,500 years ago. Empowering critical thinking is recognized to help people analyze information, understand differences, and make fair decisions (Livingston, 2019). It is also considered that people who are deeply thoughtful are inquisitive, free to express their opinions, and able to listens to others. It is, thus, vital to develop critical thinking skills to effectively analyze arguments and evaluate information (Alsaleh, 2020, and Livingston, 2019). Thinking skills play important roles to examine arguments in reading written texts (Facione, 2015). Researchers on critical thinking found out that teaching critical thinking skills is essential for students to develop their reading comprehension skills (Fahim & Saeepour, 2011). In other words, research showed that students who learned critical thinking skills have developed their reading comprehension.

Although there are arguments on the teachability of critical thinking skills (Wale & Bishaw, 2020), most scholars viewed that these skills can be taught either independently as a separate course, or with the integration of English language contents (Zare & Biria, 2018), or a combination of both methods (Facione, 2015). When critical thinking skills are taught independently, the contents presented to the students may not be related to a specific subject matter, rather, may be derived from general problems that students faced in their daily lives (Fahim & Saeepour, 2011). Teaching critical thinking skills requires not only teaching the subject matter in-depth but also teaching the principles of critical thinking in general (Stefanova, Bobkina, & Sánchez, 2017). On the contrary, critical thinking skills may not be clearly defined though the skills are parts of the contents while teaching critical thinking skills with an integration of other subjects (Arifin, 2020). Hence, critical thinking skills and abilities are not the focus of the teaching-learning process, instead, knowledge and thinking are taught together as students develop

critical thinking skills and abilities to understand the subject matter (Silva, 2008). Thus, it is possible to develop critical thinking skills while learning the content of a specific subject. Generally, Fahim and Saeepour (2011) identified that teachers can teach critical thinking skills independently either as a subject matter or as a mix of other subject matter contents. In this regard, it is important to teach students practical lessons with real-life examples.

Most critical thinking educators have long viewed critical thinking as an appropriate learning experience to empower students' in their education (Lai, 2011). For instance, as Fahim and Saeepour (2011) explored, teaching critical thinking skills has positive effects on students' reading comprehension ability. It also showed that there was a direct relationship between critical thinking and students' learning in general and there was also a strong link between critical thinking and reading comprehension in particular. However, as far as the researcher's reading is considered, there are no adequate local studies conducted on the issue. In order to fill this research gap, therefore, the current study investigated the effects of teaching critical thinking skills on high school students' reading comprehension.

Statement of the Problem

As reading is a foundation for the development of other language skills, being able to read is vital for students' academic success (Eshete, 2018). However, students cannot often read and understand English language reading texts due to various reasons including lack of effective teaching methodology (Khaokaew, 2012). According to Asfaw, Alemu, and Teka (2018), the gradual decline in the ability of students to read is a national and international problem. Most students start high school without adequately developing their reading skills in English language (Al-Habbah, 2016). In this regard, Almutairi (2018) stated that although reading comprehension is a basic skill required for all students to succeed in school and everyday life, most students in America have reading difficulties including misuse of basic knowledge, lack of vocabulary, slow reading, and inability to identify ideas. As a result, students may continue to have these problems throughout their school years unless they are helped to solve the problems (Namazian & Hayavi, 2017). When students do not improve their reading skills in their education, they find it difficult to get good jobs (Ramos, 2018. Apart from this, if they are not good readers, they would become dependent of others and excluded from their social life (Samelian, 2017). On the other hand, when students develop their reading skills, they would be successful in their future life

(Almutairi, 2018). Therefore, solving students' reading comprehension problems is mandatory to enable students successful both in their academic endeavors and employment.

Several local studies including Asfaw, et al. (2018), Bekele (2018), Yalew (2017), Wubetu and Tesfa (2018), and Eshete, (2018) showed that students had difficulties in reading comprehension. Similarly, Bekele (2018) also noted that due to lack of appropriate instruction to develop reading skills, high school students in Ethiopia do not had the required level of reading comprehension. In addition, Yalew (2017) also noted that many students' reading comprehension skills were weak, which was reflected due to poor classroom practice.

Consequently, it is important to explore a better reading instruction than the conventional method of teaching to develop students' reading comprehension (Yildirim & Söylemez, 2018). Because twenty-first century is an information age, students need to find information, analyze and interpret the information to make meaning. In order to figure out reliable information and make meaning, using critical thinking skills, among others, is advisable by most critical thinking researchers like Ozcan (2020) and Paul and Elder (2005). However, though there are studies conducted on critical thinking skills, the practice is inadequate because students are often asked to memorize a given idea and, when asked, to rewrite it or produce the same idea, rather than to examine the idea in-depth and increase their personal views.

Critical thinking researchers such as Qing (2013), Rana (2012), and Yildirim and Söylemez (2018), the role of teachers in language learning process should not be limited to teaching language skills. Instead, they should encourage their students to take active roles in current and social issues. In this regard, when students use their critical thinking skills in the target language, they can be proficient users of the intended language. Supporting the inevitability of teaching critical thinking skills in EFL contexts, Kabilan (2000) and Stefanova et al (2017) noted that language learners can be proficient through mastering language mechanisms while learning through communicative language teaching. It is emphasized that learners become proficient by using the language not learning about language. Nowadays, it is believed that knowing about the language does not lead learners to be proficient, rather students need to display critical thinking through the language to express their ideas reasonably. In contrast, some other researchers have found that teaching critical thinking skills does not significantly improve students' reading skills. For instance, Velayati (2017) unveiled that teaching critical thinking skills is not

effective in developing students' reading skills for a variety of reasons including misuse of basic knowledge, and vocabulary. It is believed that being a critical thinker is an innate behavior that cannot be achieved through education.

Although teaching critical thinking skills is a controversial issue; introducing students to these skills is needed because the goal of education is to produce critical thinkers who strive-for solutions to world problems. However, students in the conventional method of teaching reading are learning to rote memorization and simulation rather than to think critically (Fahim & Saeepour, 2011). Such methods prevent students from exploring what they are learning because teachers often do not pay attention to the views of students, and do not allow students to express themselves. Recognizing that students are not required to use their critical thinking skills in language classes in general and reading lessons in particular, researchers such as Namazian and Hayavi (2017), Velayati (2017), and Fahim and Saeepour (2011) advised that students ought to be encouraged to use their critical thinking skills to improve their reading comprehension.

The current researcher's teaching experience also showed that most students do not tend to evaluate, criticize and analyze arguments, and relate them to their own prior knowledge when reading written texts. In addition, when the students faced reading problems, they often give up reading instead of trying to find ways that overcome their problems. Besides, the students do not respond appropriately when they are asked to reflect on texts they read. However, adequate studies are not conducted on the effects of teaching critical thinking skills on students' reading comprehension. While most previous studies have focused on exploring various reading comprehension strategies, the importance of teaching critical thinking skills to students' reading comprehension was paid less attention.

Literature Review

Critical thinking is the ability to reach a comprehensive understanding through asking and/or answering insightful questions using cognitive skills that involve a higher level of cognitive ability (Wale & Bishaw, 2020, Velayati et al, 2017). Similarly, Namazian and Hayavi (2017) also noted that critical thinking is to consciously observe, analyze, reason out, and evaluate situations or events. It is purposeful, reasoned, and directed to goals such as solving problems, formulating inferences, calculating likelihoods, or making decisions (Fahim & Sa'eepour, 2011). Finally,

Facione (2015) mentioned that cognitive skills used for critical thinking have consisted of interpretation, analysis, evaluation, inference, explanation, and self-regulation.

Reading Comprehension and Critical Thinking

Reading comprehension is assumed to be the ability to construct meaning and thinking before, during, and after reading through integrating the reader's background knowledge with the information presented in the context (Eshete, 2018). Besides, Maibodi (2014) and Sandhu and Blakeley (2020) stated that reading is a mental activity that needs the activation of readers' thinking to critically engage with a text and achieve comprehension. In the reading process, there is a dynamic relationship between the reader and the text, in which the reader performs various cognitive tasks and combines his/her background knowledge with the information given in the text (Namazian & Hayavi, 2017).

As Sandhu and Blakeley (2020) mentioned, readers can predict the writer's purpose and the content of the text. Reading comprehension is, therefore, a process that actively builds meaning among the components of the text and personal experience. Readers actively participate to find the information by interacting with the text using their background knowledge (Velayati, Muslem, Fitriani & Samad 2017).

Reading comprehension in English as a Foreign Language (EFL) classes is about getting meaning from passages, comprehend ideas, or get what the author's purpose is (Namazian & Hayavi, 2017). In this case, reading comprehension, particularly critical reading and critical thinking are closely related (Dianti, 2012, Aloqaili, 2011). Critical thinking involves reflecting on what one has read concerning his/her prior knowledge and understanding. Likewise, critical reading demands readers to go beyond superficial ways of evaluating written texts to question and challenge the attitudes, values, beliefs, and ideologies that lie beneath the surface. A critical reader receives information neutrally and then starts to analyze and evaluate it (Fahim & Sa'eepour, 2011). The reader constructs the author's voice, and at the same time assesses the value of what this constructed voice argues. In critical reading, the reader should understand the implied as well as the stated meaning. The readers, he/she ought to evaluate the source from which the reader is reading and focusing on ways an author uses words to convey points (Aloqaili, 2011). The critical thinking skills frequently mentioned in textbooks, for they are also similar to those stated in reading texts (Namazian & Hayavi, 2017). For instance, critical thinking skills such as withholding judgment until

confirming or disconfirming evidence is gathered, questioning, being flexible, inferring, predicting outcomes, recognizing bias are some of the skills that can also be found in critical reading textbooks (Arifin, 2020; Albeckay, 2013), and Yildirim & Söylemez, 2018).

Developing Reading Comprehension through Critical Thinking Skills

When students are not exposed to and do not master the ability to think insightfully and critically, they become unable to compete in a global economy (Fahim & Sa'eepour, 2011). In order to better prepare students for the challenges they will face, teachers need to explicitly teach critical thinking skills (including interpretation, analysis, evaluation, explanation, inference, and self-regulation) to equip them with twenty-first-century skills (Ibid). For instance, a rigorous English curriculum focused on an explicit, scaffolding approach to teaching critical thinking skills, better prepares high school students for college and employment (Hove, 2011).

Integrating critical thinking skills in the curriculum helps students enhancing their thinking abilities because the goal of integrating critical thinking in the classroom is to increase students' competence in thinking which instigate learners to critically discuss an idea before accepting it (Wale & Bogale, 2021, AlKhoudary, 2015). According to Stefanova, Bobkina and Sánchez (2017), since critical thinking cannot be done in a vacuum, it should not be taught in isolation, rather it ought to be inserted into a curriculum, including reading syllabuses.

Critical thinking instruction incorporated both the general and the specific components (Ennis, 1989). Critical thinking can be taught in the context of domain-specific content, or content drawn from events in everyday life. Alsaleh (2020), Arifin (2020), and Paul (1992) mentioned basic critical thinking skills courses, as well as including critical thinking within discipline-specific courses. Emily (2011) recommended that both general and subject-specific approaches can be used together for the effectiveness of the teaching delivery.

Maibodi (2014) stated that EFL learners should be constantly exposed to written texts which require them to be able to use reading and thinking skills simultaneously. In order to understand the text and facilitate the interaction between the text, setting, reader, and reader background the students have to be critical thinkers. In other words, students have to learn to value their own thinking, to compare their thinking and interpretations with others, to reexamine or reject the parts of the process in which they learn.

Critical thinking can be taught in reading classes where students can infer information from texts since they are given enough time to interact with texts (Karimi & Veisi (2016) and (AlKhoudary) (2015). Most of the mental skills employed in reading comprehension are inference, analysis, synthesis, and evaluation which are the core of critical thinking (Fahim and Sa'eepour, 2011). Hence, there is a significant correlation between critical thinking and reading comprehension because improvements in one are paralleled by improvements in the other. Zare and Biria (2018) also confirmed that there was a robust positive correlation between learners' levels of critical thinking ability and their reading comprehension. Students regarded as high critical thinkers significantly outperformed the lower critical thinkers on reading comprehension. As Zare and Biria (2018) found English for Specific Purpose learners' reading abilities have been improved through increasing their abilities to reason, analyze, synthesize, apply, and evaluate information during the reading process. It is identified that critical thinking strategies play a pivotal role in the reading comprehension process.

Materials and Methods

Research Design

This study employed a quasi-experimental pretest-posttest two-group research design. Accordingly, two classes of grade 9 students were randomly assigned as experimental and control groups. Both the experimental and control groups were given pretest and posttest before and after instruction, respectively. While the experimental group students received critical thinking skills instruction, the control group ones learned through the conventional method of teaching reading skills.

Participants

In this study, a total of 98 grade 9 Ethiopian students participated. The grade level and the school were purposefully selected because the researcher observed the problem while teaching English at the stated grade level. The school was public, and it had ten classes of grade nine students. Among those classes, the researcher randomly selected two classes and assigned them to experimental and control groups randomly, after the pretest.

Instruments

The data on the effects of teaching critical thinking skills on EFL students' reading comprehension were collected through a reading comprehension test, students' reflective journal with open-ended items,

and semi-structured interview. The reading comprehension test which comprised both pretest and posttest was used to collect data on the students' reading comprehension before and after the intervention, teaching critical thinking skills with the integration of reading skills. The reading comprehension pretest was given to both experimental and control group students to understand their existing reading comprehension performance before the intervention. Likewise, a different reading comprehension test, posttest, which was parallel to the pretest, was also given to both groups after the intervention to determine whether the intervention made any differences in their reading comprehension performance. The pre-test and post-test were similar rather than identical which was done to reduce the repetition effect between pre-test and post-test on the students' test scores. The students' reading comprehension test results were marked by two experienced English language teachers using the British Council IELTS reading band score scale. The pretest and posttest reading comprehension tests contained 40 questions each with one mark awarded for each correct answer. The score out of 40 was then converted to the IELTS nine-band scale (British Council, 2018).

The students' reflective journals were used to collect data on the effectiveness of critical thinking skills instruction from the students' outlook. Thus, the experimental group students have reported their daily feelings on the usefulness of learning critical thinking skills and their reading comprehension progress during the intervention. The students reflected their views six times using their mother tongue. Finally, the semi-structured interviews were conducted after the intervention with twelve experimental group students to gain the students' perspective on the effectiveness of learning critical thinking skills and the development of their reading comprehension. The semi-structured interviews were conducted face-to-face using the students' mother tongue for fifteen minutes with each of the interviewees. Accordingly, the students were asked to forward their views on the role of critical thinking skills instruction in the development of their reading comprehension.

Data Collection Procedures

First, a teaching material that focused on critical thinking skills and reading comprehension was prepared by consulting the existing literature. In other terms, the teaching material was designed in a way that empowered students to practice the core critical thinking skills including interpretation, analysis, evaluation, explanation, and inference in reading texts because these skills enable students to develop their reading comprehension. On the other hand, the teaching material was also

designed in a way that enables students to read and understand various written texts because understanding a text is the goal of reading comprehension. The teaching material was organized with 40 pages using various source, and most of the contents were adapted from Facione (2015), Lakshima and Rao (2010), and Ethiopian grade nine students' English textbook. The critical thinking skills were taught explicitly with the integration of reading lessons. The teaching material, therefore, was developed in harmony with the core critical thinking skills and reading comprehension.

Second, a researcher-made reading comprehension pre-test was given to the experimental and control group of students to realize their baseline reading comprehension performance before the intervention.

Third, the intervention was given for twelve consecutive weeks. The experimental group of students engaged in reading tasks that empower them to interpret, analyze, evaluate, explain, and infer reading texts, and self-regulate on their own reading performance. Hence, towards the beginning of the intervention, the students brainstormed what critical thinking is and what critical thinking skills are. Then, the students had learned about the aforementioned core critical thinking skills with examples in support of the teaching material. Subsequently, the students practiced the use the critical thinking skills during reading texts and responding to reading comprehension questions. The students practiced it with six reading passages and a number of reading comprehension questions that were taken from the passages. The reading comprehension questions used in the intervention were related to critical thinking skills, and the questions enabled students to critically read the texts and understand the meanings of the texts. In the intervention, therefore, the students explained each critical thinking skill, analyzed and inferred various reading texts using critical thinking skills, and answer numerous reading comprehension questions using critical thinking skills. On the other hand, the control group students were conventionally taught how to read texts to build their knowledge of reading skills. Thus, a teaching material that was designed in line with the conventional approach to teaching reading skills was given to the students for mere memorization, and to do the given reading tasks that mostly require lower-order thinking skills.

Fourth, while the intervention was going on, data through student-reflection journal was also collected from the students. Fifth, following the intervention and the student-reflection journal, the experimental and control group students were given the reading comprehension post-test.

The post-test was used to determine whether the critical thinking skills instruction brought effects on the experimental group students' reading comprehension skills. Last, the interview was conducted with the experimental group students to gather information on their outlooks about the effectiveness of critical thinking skills instruction on reading comprehension.

Data Analysis Methods

The data were analyzed using quantitative and qualitative data analysis methods based on the nature of the collected data. Hence, the data gathered through tests were analyzed through independent samples t-test. The independent samples t-test was used to identify whether there were differences between the experimental and control groups of students' reading comprehension before and after the intervention. Conversely, the qualitative data were also analyzed using thematic data analysis method. In other words, the students' reflective journal and the interview transcripts were examined to identify common themes or topics, ideas, and patterns of meaning.

Results and Discussion

Students' reading comprehension development

With the purpose of assessing the students' reading comprehension, descriptive statistics was run.

Table 1: Descriptive statistics of control and experimental group of students

Participants	Test	N	Mean	Std. Deviation
Control group	Pre-test	48	33.02	1.523
	Post-test	48	34.38	2.056
Experimental group	Pre-test	50	34.15	1.625
	Post-test	50	42.73	2.160

Thus, Table 1 displays that the control and experimental group of students had similar reading comprehension in the pre-test. The control group had a mean score of 33.02; whereas, the experimental group had 34.15 mean score. In other words, though it looked that the students had some inconsistencies, in the mean scores, the variance they had was not

statistically significant. It shows that the students, before the intervention, had similar reading comprehension.

A significant difference, nevertheless, was observed between the experimental and the control group of students in their post-test reading comprehension scores. As it can be seen in Table 1, it was evident that the critical thinking group exhibited better enhancement in their reading comprehension than the control group. It is to mean that while the control group had a mean score of 34.38, in the post-test, the experimental group had 42.73 mean score, in the same test. These data, consequently, unveiled that even though both groups of students enhanced their reading comprehension performance, the experimental group of students exhibited greater enhancement. Likewise, the students in the interview confirmed that they have developed their reading comprehension skills. Similarly, the students in their reflective journals stated that they were able to comprehend written texts after learning critical thinking skills in accordance with reading skills.

In addition, an independent sample t-test was run to statistically prove whether the group statistics between the control and the experimental groups differ. As it can be seen in Table 2, the experimental group (M= 9.80, SD= 1.52) scored higher test results than the control group (M= 1.62, SD= 9.80).

Consequently, the result seemed to show that the critical thinking skills group students had greater mean scores on their reading comprehension compared to the group. Likewise, the data gained from the interview unveiled that teaching critical thinking skills in reading classes enabled students to develop their reading comprehension performance. Correspondingly, the students in the reflective journal confirmed that they were interpreting, analyzing, evaluating, explaining, inferring written texts, and self-regulating while learning reading skills using critical thinking skills. For example, one of the students mentioned that: "I have learned the critical thinking skills in reading lessons which enabled me to develop my reading comprehension. In the same way, another student also added that: "compared to my previous reading ability, now, I can dear and understand different reading texts due to the reading activities that I learned with the integration of critical thinking skills". All in all, the majority of the respondents, ten students among twelve interviewees, confirmed that the learning of critical thinking skills with the integration of reading lessons has contributed to the development of their reading comprehension.

Table 2: Group statistics of control and experimental groups

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Total Results	Control Group	48	1.6222	9.8051	.20565
	Experimental Group	50	9.8051	1.52240	.17766

An independent samples T-test was run to statically decide the differences among the group mean scores of the control group and experimental ones. Table 3 revealed that Levene's Test for Equality of Variances showed no violations, P= .807. The independent t-test shows that there was a statistically significant difference between the control group and the experimental group (t = 18.32, df= 59, P< .05). It reveals that the experimental group of students who learned reading skills with the integration of critical thinking skills outstripped in their reading comprehension.

Additionally, the data gained from the students' reflective journal also indicated that the students' reading comprehension enhanced as a result of the critical thinking skills instruction. In the reflective journal, the students mentioned that learning critical thinking skills was crucial as it enabled them to be better readers because the method provides them a responsibility to do reading tasks, and guides them on how to critically read and understand written texts. For instance, one of the students noted that: "Such kind of learning reading skills that we used was relevant because it gave me the chance to inquire various text-related questions in reading written materials using my critical thinking skills". The students regarded that their reading comprehension skills were enhanced as a result of using the critical thinking skills instruction. The students assured that their capability to accomplish reading tasks has been developed because they were learning reading skills inversely compared to their earlier experience. Correspondingly, another student replied that: "Before taking the critical thinking skills instruction, I strained to read and understand essays, but now I used my critical thinking skills and comprehend texts in a better performance. So, since I have experienced many techniques in the teaching-learning process, the critical thinking skills that I taught were effective to enhance my reading comprehension". The students' reflective journals showed that the given reading tasks were relevant to them because the tasks were supportive to understand

more about reading skills. The students established that the reading activities given in the instructional process invigorated them because the activities led them to comprehend reading texts effectually.

Lastly, the data gained from the students' interview also discovered that critical thinking skills instruction helped students enhance their reading comprehension. The students in the interview responded that they have enhanced their reading comprehension when they taught critical thinking skills in reading lessons. One of the students elaborated that: "Since reading is an essential language skill, I have learned it for many years, but I often did not catch the implied meaning of reading texts before this time. However, when I practiced using my critical thinking skills while reading texts, I become to understand the direct and implied meanings of texts. I hope, I have developed my reading comprehension skills after learning the critical thinking skills with reading lessons".

The students also believed that the critical thinking skills instruction assisted them to comprehend written texts because the tasks that they experienced in the intervention were relevant to interpret, analyze, evaluate, explain, infer contextual meanings, and self-regulate after reading texts. The results gained from the interview, therefore, uncovered that teaching critical thinking skills in reading classes possibly supports students develop their reading comprehension. It is because teaching critical thinking skills developed the students' performance in reading comprehension.

Table 3: Independent samples t-test of control and experimental groups on post-test

		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Results	Equal variances Assumed	.050	.807	18.317	59	.000	7.16181	.41980
	Equal variances not Assumed			18.300	58.366	.000	7.16181	.42018

Altogether, the students in the reflective journal and interview divulged that they better comprehend reading texts when they employed critical thinking skills in their reading classes. From the qualitative data, thus, it was observed that the students developed their reading comprehension performance through using their critical thinking skills because the

method provided them an active role to critically question the ideas mentioned in reading texts.

On the whole, the results gained from the tests, students' reflective journal, and interview exhibited that the critical thinking skills instruction improved the experimental group students' reading comprehension. In other terms, the critical thinking skills group of students reads and understands the meaning of texts when they read various texts.

On the other hand, the control group students were conceptually clear about how to read texts, but not effective to comprehend texts. It was because the students did not tremendously use their critical thinking skills while reading texts. They also tried to understand superficial ideas which required lower-order thinking skills rather than to dig out implied meanings that entail critical thinking skills. The control group students, in their post-intervention reading comprehension test, were unable to comprehend the given written text compared to the experimental group of students.

These results of the study inferred that the improvements in the experimental group of students were attained as the result of using critical thinking skills instruction that focused on interpreting, analyzing, evaluating, explaining, inferring arguments given in reading texts, and self-regulating before concluding on the general and specific messages of the texts.

Based on the nature of critical thinking skills, the students used their critical thinking skills in the reading lessons. In the learning process, the teacher also provided scaffolding by observing, questioning, and guiding students to investigate the arguments stated in the reading texts. Besides, the teacher also introduced relevant concepts, principles, and theories to help students develop a deeper understanding of their reading skills through critical thinking skills. Thus, with the support of the teacher, the core critical thinking skills might have helped students to develop their reading comprehension. This study, therefore, discovered that teaching critical thinking skills in reading lessons improved students' reading comprehension since using critical thinking skills enabled students to deeply read written texts and understand multiple ideas.

The findings of this research are congruent with previous research findings in that teaching critical thinking skills in reading classes improved students' reading comprehension. Hence, scholars who conducted studies on critical thinking confirmed that teaching critical thinking skills and abilities was found to be essential for students'

success (Fahim & Saeepour, 2011; Facione, 2015; Silva, 2008; Alkhoudary, 2015, & Livingston, 2019). Predominantly, Fahim and Saeepour (2011) conducted a study on the impact of teaching critical thinking skills on reading comprehension of learners and unveiled that teaching critical thinking skills positively affects students' English language learning in general and reading comprehension in particular because using critical thinking skills in the learning process is the central part of the education. There was a strong link between critical thinking and reading comprehension. It also disclosed that there was a direct relationship between critical thinking and students' learning reading skills. Critical thinking-based reading instruction would be one of the instructions which would help students to comprehend reading texts, and to nurture as readers.

It is divulged that critical thinking skills instruction showed positive effects on students' reading comprehension because the method focuses on discovery with little explicit instruction contrary to lecturing students on how to read texts. Alkhoudary (2015) conducted a study on the effect of teaching critical thinking on college students' language learning and found that integrating critical thinking skills in the curriculum helped students to enhance their thinking abilities because the ultimate goal of integrating critical thinking in the classroom is to increase students' competence in thinking which instigate learners to refute and discuss an idea before accepting it. Teaching critical thinking skills developed the students' performances to read and understand written texts because it enabled them to interpret, analyze, evaluate, explain, infer arguments incorporated in texts, and self-regulate to verify their comprehensive understanding of the entire meaning of texts.

Similarly, learners who were taught reading through critical thinking skills in their language learning were better achievers because they were actively involved in asking and responding to questions. The method enabled students to read and understand reading texts and work on comprehension activities. Silva (2008) explored students need to learn knowledge and thinking together as they develop critical thinking skills and abilities to understand the subject matter, including reading skills. When students know how to use critical thinking skills in the target language, they can be proficient users of the intended language.

Contrary to the current discoveries, some researchers believed that critical thinking cannot be taught, rather it can be gained naturally. Thus, such researchers found that teaching critical thinking skills do not significantly improve students' reading skills. For example, Velayati

(2017) who conducted a study using Facione's critical thinking skills classification showed that teaching critical thinking skills is not effective in developing students' reading skills for a variety of reasons including misuse of basic knowledge, and vocabulary. It, thus, implied that when students inadequately use their background knowledge, use inappropriate vocabulary, disintegrate the critical thinking skills with reading skills, and practice the critical thinking skills with insufficient reading texts and comprehension questions, the processes of teaching critical thinking skills would not be effective. However, when students use their background knowledge, use appropriate vocabulary, integrate the critical thinking skills with reading skills, and practice the critical thinking skills with sufficient reading texts and comprehension questions, teaching critical thinking skills would be effective to develop their reading comprehension.

Conclusion and Implications

This study examined the effects of teaching critical thinking skills on EFL students' reading comprehension and disclosed the following main findings. The research showed that teaching critical thinking skills in reading classes enhanced students' reading comprehension because the skills provided active roles to the students to critically examine the arguments stated in texts. The result of the study also revealed that when the experimental group students used critical thinking skills in their reading lessons, they read written texts critically, examine the relationship of arguments raised in texts, and understand the explicit and implicit meanings of texts.

Nevertheless, the control group students were less effective in reading and comprehending written texts because most of them did not critically read texts, and inadequately examined the relationship of arguments raised in texts, and incapably understand the explicit and implicit meanings of texts for they did not adequately use their critical thinking skills while reading texts.

The experimental group students improved their reading comprehension due to the critical thinking skills instruction intervention that engaged students in interpretation, analysis, evaluation, explanation, inference, and self-regulation. When students, therefore, practiced this distinct high-level cognitive process in manipulating such tasks, their reading comprehension developed because these skills helped them enhance their ability to read and understand reading texts.

Therefore, teaching critical thinking skills is suggested as a means to enhance students' reading comprehension because using the skills enable students to critically view arguments in reading texts, identify relationships and differences among ideas, recognize major points, postulate further understandings, propose alternative explanations, and reconsider their own understandings of the reading texts. It infers the necessity to promote teaching critical thinking skills, which is based on a discovery approach that involves students in seeking, analyzing, synthesizing, and evaluating information. It was because using critical thinking skills in reading written texts encouraged students' reading ability and makes them active, problem solvers, independents, and lifelong readers.

Accordingly, reading teachers should teach critical thinking skills in their reading classes to improve students' reading comprehension. Equally, reading teaching material developers need to consider critical thinking skills in developing reading textbooks so that students improve their reading skills. In addition, students should also adequately use their critical thinking skills while reading texts to critically read texts and completely understand the entire meaning of reading texts.

Finally, the time taken during the intervention and the participants involved in this research were relatively small. Nevertheless, it is not mean that the discoveries of the study are not representative since the participants have similarities with other learners. Similarly, it is not to mean that the intervention was completely inadequate because the students profoundly practiced their critical thinking skills. It is, rather, to mean that the discoveries of the study would have been more substantial if a greater number of students had participated, and additional time to the intervention had been allocated. Such future exploration, therefore, will contribute to this research and is positively an area ripe for future study on teaching critical thinking skills in reading classes. Moreover, future researches should be also conducted on teaching critical thinking skills in writing, speaking, and listening classes to benefit students through using critical thinking skills in language learning. This would be a key to measure the effects of critical thinking language instruction on EFL learners' language proficiency.

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